

Tenfold

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Cherry blossoms and CBT: CTC goes to Washington

Say CBT in Washington, D.C. and many people might think the letters stand for "cherry blossom time." But since the arrival of CTC in late 1989, more people will think of computer based training. Elsewhere in the world CTC relies upon strategically located dealers, but it decided upon Washington, D.C. for its first branch office. Not only is Washington the nation's capital, but it is also becoming America's newest high tech hub. Route 267 Dulles international Airport access road has become the focus of this advanced technology corridor, and CTC has situated its new office conveniently along this route.

Our man in Washington

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John Loggins, director of CTC's new Washington office, and his family have

been happily settled in the Washington area for the past six years. Prior to locating in Washington, Loggins' career afforded him a good overview of CBT in America.

Loggins was graduated from college with a degree in psychology, and a masters degree in guidance counselling education. Following college, Loggins entered the Air Force where he was able to pursue his interest in training and his fascination with training technology. These studies and experiences proved useful in his consuming interest, CBT, the field he entered after leaving the Air Force.

McDonnell-Douglas selected Loggins to lead and manage the implementation of CBT into the Navy's F-18 program.

Successful TenCORE applications repeatedly confronted Loggins during his career in the CBT industry. Over time he realized that TenCORE was not only keep-

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DEAR READERS

CTC is expanding rapidly. In the past six years we've grown fifty percent annually. This amazing growth was easy for a small company with just a few people. Entering 1990 with thirty employees and a satellite office in Washington, D.C., we had assumed the pace of growth would slow. Instead, during January alone we've added seven new members to our team in Champaign. Worldwide the number of our dealerships has grown to over thirty.

Counting ourselves and our dealers, there are now over three hundred people directly involved with producing and supporting our TenCORE line of products. Our new product, the TenCORE Producer, resulted in a doubling of sales over the last three months even before its formal announcement. A most conservative estimate predicts that we will double in size in 1990. We need more space and maybe even a larger city to handle our technical growth needs.

This growth is remarkable in another sense: our funds come strictly from product sales. While most or all of our competitors survive on venture capital or money earned from other branches of their companies, we are self-supporting. As our size increases, we are able to commit ever more resources to refining our triad of products: the TenCORE Language Authoring System, the TenCORE Producer, and the TenCORE Computer Managed Instruction System.

I predict that the number of authoring system manufacturers, approaching one hundred in the US alone, will decline as we grow and capture greater market share. The almost daily appearance of new authoring systems will cease since it is becoming an impossibly Herculean task to

develop them with standards high enough for today's more mature marketplace.

Our growth is limited by our success in finding qualified employees, especially system programmers, to continue the development of our products. We have the financial base but not enough able people. The lack of qualified CBT practitioners also limits the growth of the entire CBT field, including your courseware efforts.

As we move into the 90's, I feel for the first time in my twenty-five years in this field that everything is coming together. We finally have available adequately "intelligent"

workstations ideally suited for CBT and software sophisticated enough to easily control this hardware. However, in our computer-intensive field, CTC and our customers need talented technical experts more than ever before: systems programmers, applications programmers and documenters. (In case these comments are read by a technical guru seeking redeployment to a challenging position, please contact me directly. If we can't use your talents, perhaps we can match you with one of our customers.)

CTC President Paul Tenczar

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Interactive Learning Systems lights Scotland and insures Lloyd's

ICL Interactive Learning Systems, part of the STC Group, was formed in 1985 to cater to the rapidly growing market in interactive, computer-based training (CBT). It is now one of the largest suppliers in Europe. Based in Beaumont, Old Windsor, England, ILS provides a "one-stop" facility offering a wide range of products and services. These include consultancy, authoring systems, tailor-made and marketable CBT and interactive video courseware, delivery systems, support and training.

The ILS team of courseware designers produces customized courseware to meet clients' specific needs. The ILS team also consults with clients in writing their own courseware and assists in author training, which form important elements of ILS's total service. This also includes the provision and use of leading edge technologies, including digital video interactive, expert systems, and Integrated Services Digital Network (ISDN).

CBT: A Bright idea for Scotland



As an update to our article in the previous edition of *TenFold*, the South of Scotland Electricity Board has been awarded a prestigious National Training Award for their retail staff training program. Phase One concentrated on introducing electronic tills connected to the Board's main computer. They achieved this relatively easily through training a small group of sales staff as trainers. Two days of hands-on training was given to 550 shop staff at the Board's training center.

A more ambitious Phase Two concerned the utilization in every shop of the main-frame-linked computer. SSEB commissioned from ILS a TenCORE-based CBT package, fully developed with SSEB staff to ensure that it was user-friendly. Based around four modules, the training was undertaken individually by sales staff in their own shops during the quiet periods within the normal working day. Assessments and clearly defined performance criteria monitored the trainers' level of attainment. A proficiency test ensured their competence.

Insuring Lloyd's with TenCORE



Another recent ILS application of TenCORE was a major project for Lloyd's of Lon-

BY LYN CHAPPELL



don, the world's leading insurance market, using a combination of CBT and interactive video. The project, arranged with the help of the Insurance Industry Training Council, was jointly funded by Lloyd's and the U.K. Training Agency, which recognized the nature and complexity of Lloyd's training needs. The Agency was eager to exploit CBT/IV to improve the administrative efficiency of Lloyd's underwriters and brokers in completing the "standard slip," the document used for processing business transactions throughout the market.

The standard slip training program is one of the largest ever handled by CBT and IV techniques in the U.K. Lloyd's comprises over 60,000 people employed in 700 brokerage and underwriting firms, generating over 250,000 slips each year. Errors in completing the complicated slip inconvenience the market's customers and result in delays in collecting revenues.

"The people involved in slip completion vary in age, education and experience," said Terry Webb, Lloyd's Director of Training. "That, together with the complicated nature of the market, means that traditional teaching methods are not suitable. We had to look for a more flexible approach to solving our training needs and CBT could be the answer," Webb continued.

The package offers six training modules from which students select the most relevant insurance or re-insurance sectors, de-

pending upon whether their interests lie in marine, non-marine, or aviation. There are a series of linked case studies of how the slip should be completed, interspersed (for people further down the administrative chain) with video sequences simulating the consequences of making errors. There are technical questions about the particular aspects of the document, with prompts to help the inexperienced. An end-of-course test module assesses how much students learned.

CBT flexibility



Webb emphasized flexibility: "It is available to trainees individually, fits into a variety of training timetables, or can be used for one-off top-up training sessions. It works because it makes it easy to learn complex things and does it more cheaply than traditional training methods." The package provides immediate feedback of results, allowing trainees to learn at their own pace. Instructors can measure performance accurately across very large groups, identifying and rectifying areas of weakness.

The product is available to brokerage and underwriting concerns within Lloyd's market. Lloyd's has set up a learning resource center under the auspices of its training center, to which market staff can be sent for training. Alternately, firms can buy or lease the package from ILS for use on their own premises.

GETTING TO KNOW YOU

CTC regularly participates in trade shows around the globe. If you currently work with one of our TenCORE family of products, we'd be delighted to get to know you better, and for you to become more familiar with CTC. If you haven't worked with the TenCORE family of products, please take this opportunity to learn about them, and about us. We're looking forward to seeing you at one of the following events:

April 1-4

Computer Based Training, Chicago, Illinois

August 22-24

Society for Applied Learning Technology, Washington, D.C.

October 16-18

European Training Technology Event, Netherlands Congress Centre, The Hague

November 5-8

Interservice Training and Equipment Conference, Orlando, Florida

Please feel free to telephone us prior to your departure to these shows to learn our booth or suite number. Additional trade shows may be scheduled as well, so please contact us to see if we'll be at the show that you're attending.

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**A properly executed tutorial can—
when it is appropriate—replace
expensive classroom training.**

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Absolutely, positively TenCORE

The theater darkens, the screen flickers to life, and the audience rivets its attention forward. As the curtain rises, words scroll up the screen. The audience reads intently.

More words rise from the bottom of the picture, and the audience fidgets. After five minutes, much of the audience is asleep, many more have left the theater and only a handful of determined viewers are reading steadily, but without a clear understanding of what they're seeing.

No film director in his right mind would present visual material in a text-only format, yet creators of tutorials do it as a matter of routine—losing a large portion of the audience they want to serve.

For a company like Federal Express Corporation, grabbing and keeping the audience's attention is critical because a properly executed tutorial can—when it is appropriate—replace expensive classroom training.

Like many other large organizations, Federal Express Corporation has its own staff of hardware and software developers who are devoted to improving services for both customers and employees. With this constant flow of new technology, training is a major issue. On a single diskette, we can produce a wealth of information that can be communicated in 30 minutes to one hour of viewing, and repeated as many times as necessary. We can ship it anywhere at a fraction of the cost of moving personnel.

But to meet the company's needs, we must take out-of-the-ordinary steps to create our tutorials. We have developed a unique team approach to the creation of tutorials that doesn't rely on one person or one department to decide what information is vital to the end user.

I lead a small group of three programmers and one technical writer who generate these tutorials using the TenCORE authoring system.

The Request

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The tutorial is a creative product that begins with a request. Department Z has em-

BY WALTER L. SANDERS
SENIOR TECHNICAL TRAINER
TELECOMMUNICATIONS TECHNICAL TRAINING
FEDERAL EXPRESS CORPORATION

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ployees who must be trained in new software, or long-time employees who need to be re-trained in the latest software upgrade. Department X needs to explain the operation of new equipment to field employees.

We use the TenCORE system to construct the tutorials, which then convey information about Federal Express software or hardware to the end user. Often it isn't convenient or cost-effective to bring field employees to Memphis for classroom training, particularly on systems that don't require a lot of hands-on experience to master. But to take the place of the classroom, the tutorials must be comprehensive, specific, and as much fun as possible.

After the request has been received and the viability of the project confirmed with all departments involved, the most important step is building a team to guide the development of the tutorial. The team includes representatives of the requesting department; representatives of departments that

will be affected by the software or equipment changes; and, ideally, end users. The composition of the team will determine how successful the tutorial will be in communicating the appropriate information. A side benefit to the team approach is that it brings together disparate departments and employees, giving nearly everyone involved new insights into the workings of a large organization with operations throughout the world.

The Process

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The first stage of the process is a brainstorming session held off-site, away from ringing telephones, co-workers and managers. The session lasts one or two days, depending on the complexity of the project. Without this initial session, the development of a tutorial could be accomplished during a series of short meetings over a period of ten to twelve weeks. However, the brainstorming process reduces total development time to six to eight weeks, resulting in a substantial saving in time and costs.

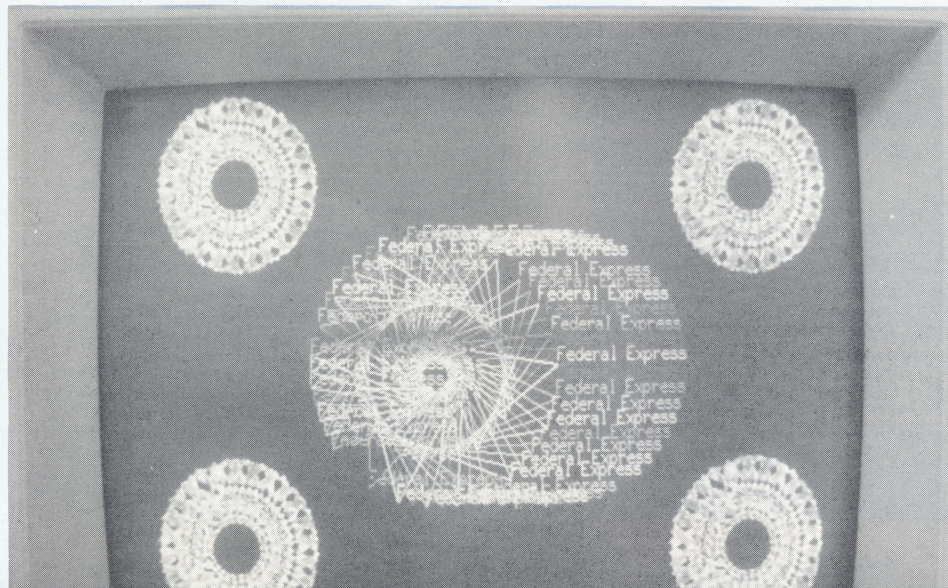
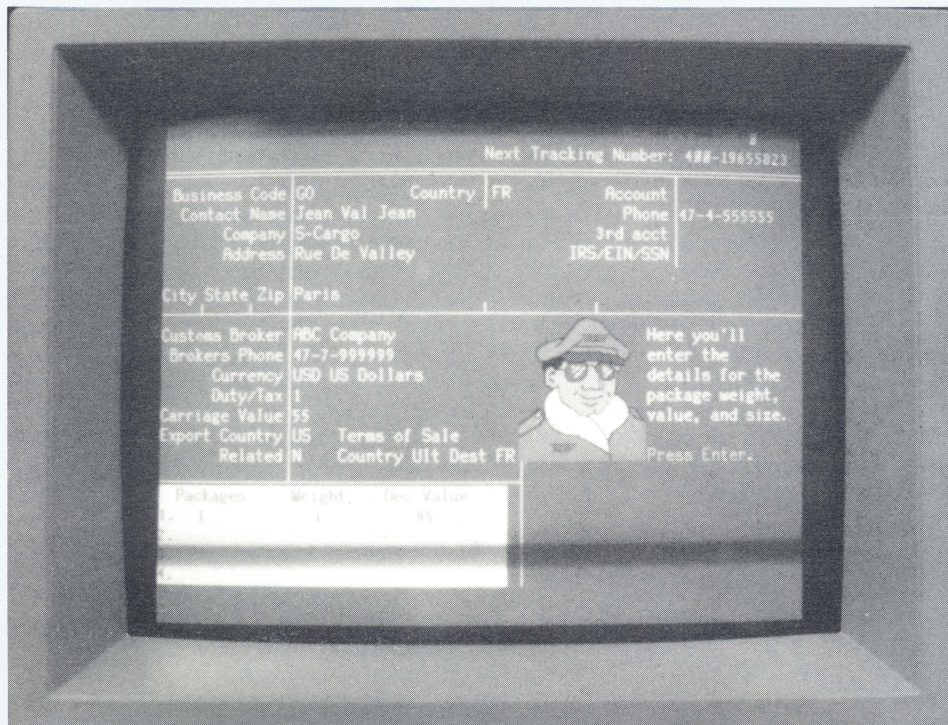
The meeting is led by a member of the TenCORE development group. We direct the discussion so that it focuses on the needs of the end users and on what the tutorial must teach them. Using a prepared agenda, we spend the first morning outlining the objectives of the tutorial, its audience, and the basic information it must contain.

We work within certain parameters. The tutorial is executed on a 3½-inch, 1.2 megabyte diskette that will operate on any personal computer, so there is no room for unnecessary detail. Most of our users are already highly trained technicians, and we keep their level of expertise in mind when we draft the framework of the tutorial.

If the brainstorming lasts one day rather than two, we will move in the afternoon to storyboarding the tutorial, much as an animated cartoon is storyboarded. We decide what kinds of graphics will most directly explain the new software or equipment. In at least three tutorials produced by our group in the past year, we have created characters to lead users through the software. For



Walter Sanders, Senior Technical Trainer for Federal Express Corporation, reviews a package tracking system tutorial constructed by the TenCORE group.



example, Max, a computer-literate lap dog, explains the use of a laptop computer and its software. In another, a dancing pear named Twisted Pear takes center stage to explain twisted pair wiring to technicians. Sky King, a dashing pilot, was created to lead Federal Express customers through the software used in our automated package shipping system.

The characters are either created within TenCORE or imported from PC Paintbrush or DR. Halo files. They can take dry, technical material and add an element of fun that inspires the user to view it to the end.

In the case of equipment, we incorporate accurate graphic representations of the hardware, animating some sequences to make procedures clear.

Review, revision and approval



Once the initial meeting is concluded, the tutorial is constructed by the TenCORE group. When our group has built a substantial portion of the product, we begin the process of review. The reviewing body includes all the original team members, who study the tutorial and revise it as many times as necessary to polish and perfect it.

The ongoing reviews may take place at meetings, or they may be accomplished by sending copies of the tutorials to team members for independent review. All the suggestions and changes are carefully documented to reduce the risk of going over old ground. There are always changes to be made, and without exception, the changes that are suggested have improved the product.

Once team members have approved the tutorial, it moves on to a final review by the managers of the departments involved. Once all those approvals are obtained, the tutorial is reproduced at an in-house facility that can copy hundreds of diskettes every hour. They are then distributed to the end users, and a follow-up survey is sent for reaction to the tutorial.

This final evaluation provides us with the material to support our faith in computer-based tutorials and further, to promote it to the next potential group of users.



TENCORE DEALER

Video Vision of Australia welcomed as new TenCORE dealer

A

fusion of technology and imagination formed Video Vision Communications, a creative communications system and software company based in Melbourne, Victoria, Australia. The company pioneers in the utilization and production of videotape and videodisc, as well as computer-controlled display, and satellite broadcast with the most advanced technology currently available. In 1989 Video Vision joined the international network of TenCORE distributors.

Well established credentials

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Although Video Vision was founded in 1978, its concept dates back 22 years. Barry Thomas, Chairman and Managing Director, previously directed Telefilm Australia, a Melbourne film production business. He led a team of news and documentary filmmakers for television networks and corporate clients at home and abroad.

During the 1970s, Thomas realized the potential of electronic field production and videotape. He conducted extensive research in North America, Asia and England to make Video Vision an innovator in high-quality broadcast production in Australia. Rapidly advancing technology enabled the sophisticated video production facilities demanded by Video Vision.

Following the company's formation, Thomas continued research into the progress of new communications technologies, as well as Video Vision's entry into the high tech area of videodisc and its interactive applications. Over the past two years he placed particular emphasis on information systems integrating videodisc, computers, and touch screen monitors with a substantial array of peripherals. An extensive library of video stock shots has been assembled for use in corporate productions. The company also owns a digital television standards conversion unit to assure clients compatibility between the domestically produced PAL format and the American NTSC format.

Interactive development division

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Video Vision established a separate interactive Division for research and development of videodisc (commonly known by its Pioneer trademark of LaserDisc/LaserVision) in 1983. This led to the production of interactive videodiscs for clients in 1986. Today Video Vision is involved in video production, videodisc pre-mastering, systems design, authoring and implementation. The company produces discs on simulation, point-of-information, and training using TenCORE. The production staff of 12, including two full-time programmers, use Intel 286- and 386-based computer workstations.

Thomas and Video Vision Administrative Director Lyn Blackley learned about TenCORE during their interactive video research. When interviewed, Thomas said: "Even though CBT is fairly new to our country, Video Vision stands ready with support tools, like TenCORE, as customers introduce and improve their training efforts."

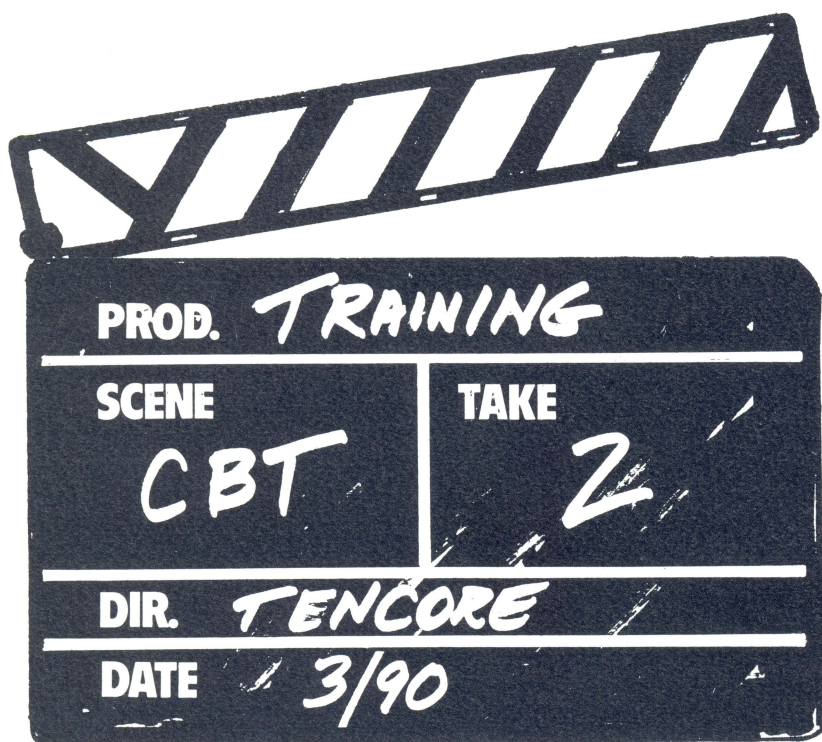
TenCORE fits business service concept

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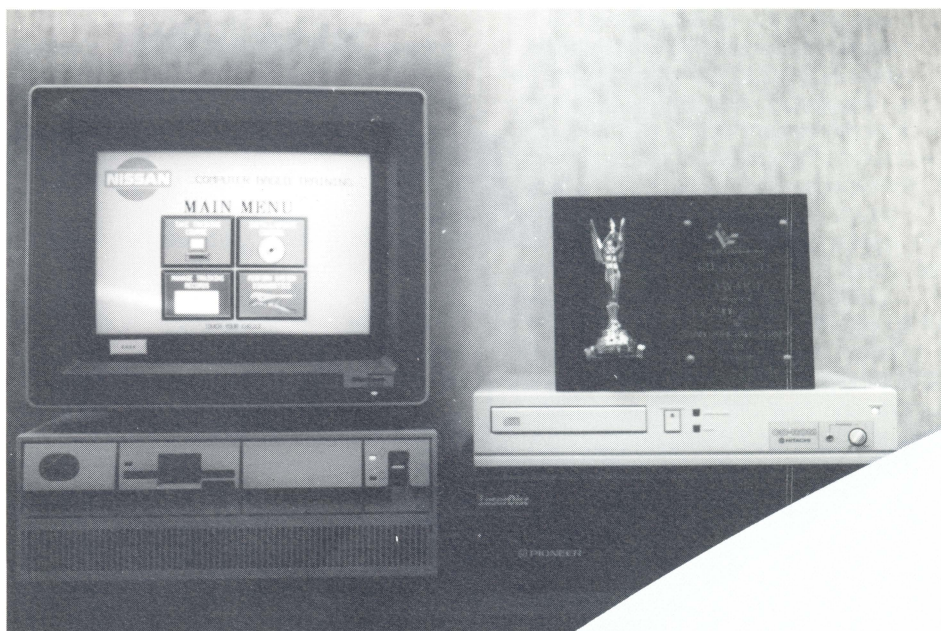
Blackley added that by becoming a TenCORE dealer, Video Vision can offer an additional service for its existing customer base and future clients. "This fits nicely with our business service concept," said Blackley.

The company's objectives are to service the corporate market and government departments with custom-designed educational and promotional technology. It endeavors to help clients find new opportunities, as well as to identify and solve problems such as those found in training, information distribution, sales and marketing areas.

Video Vision has received numerous Australian and international awards, including the 1988 International Television Association Training Award for Carlton United Breweries safety and health program, and the 1987 Pioneer LaserDisc Development Award.



IVID wins Cindy for Infiniti using TenCORE



The Gold Cindy Award

The Oscar of visual communication



Nearly every industry presents an award for outstanding achievement by its members. The Oscar's, the Emmy's, and the Toni's are examples. But for industrial video productions, it's the CINDY's (Cinema in Industry), presented by the Association of Visual Communicators. In Ceremonies in Los Angeles on November 8, 1989, IMD Communications received a Gold CINDY for "Steering and Suspension Fundamentals and Diagnostics," one of seven videodisc training

programs developed for Nissan Motor Corporation.

The interactive training courses designed for use in Infiniti and Nissan dealerships allow technicians to be trained much earlier and at much less expense than by traveling to regional training centers.

The other six courses produced by IMD for Nissan over the past 16 months are "Basic Electrical Concepts," "Electrical Systems," "Engine Management Fundamentals," "Engine Management Diagnostics," "Air Conditioning Operation and Performance," and "Refrigeration Fundamentals and Diagnostics."

IMD Communications, a San Diego-based firm, designs and develops applications using video and compact disc technolo-

gies for training, information, and data storage. IMD used TenCORE to write the lessons and tie this complex system together, and a special TenCORE CD-ROM module was created for these courses.

The Nissan CBT delivery system integrated by IMD combines LaserDisc with CD-ROM audio, touch screen control and graphic animation to teach Infiniti service technicians basic automotive concepts and diagnostic procedures. The courseware consists of about 70 percent VGA graphics with audio, and 30 percent video.

In addition to future maintenance courses, Nissan plans to add management, service advisor, and sales training courses. Even a customer education course is under consideration.

TRAINING

Jim Trueblood—from Scandanavia to Champaign

CTC employs four specialized training instructors, and nine staff members qualified to instruct, all under the supervision of Training Director Jim Trueblood. Trueblood understands the TenCORE family of programs, which include the Language Authoring System (LAS), the Producer, and Computer Managed Instruction, from all angles. He can translate TenCORE for the novice or unfold its innermost workings for the expert. We talked with Trueblood about his background and his views on TenCORE training.

A broad range of backgrounds



Trueblood learned from three years' experience at CTC that most people attending TenCORE training are not computer programmers. He said: "We've designed the course with that in mind. We try to make the course appropriate for people with a broad range of backgrounds. The ones we keep most in mind are the trainees who don't have a lot of computer background, who just want to learn how to do certain things with TenCORE." He continued: "By the time they finish the workshop, they feel that they're able to take those examples and adapt them to programs of their own."

Training workshop participants range from corporate and government users planning to do their own computer based training, to consultants, and people who plan to employ consultants, but desire an understanding of how TenCORE works. They learn of the training program from a variety of sources: brochures, the CTC marketing department, and most important, word of mouth.

CTC offers satellite training facilities, such as its new Washington, D.C. office, for users who cannot attend classes at the Champaign headquarters. Additionally, CTC sends instructors worldwide to the users' location for private workshops. Recently CTC instructors visited Brisbane and Hong Kong, as well as Atlanta, Detroit, and Poughkeepsie.

TenCORE: No tune as sweet



Thirty-four-year-old Trueblood studied music at Indiana University and computer science at the University of Delaware, where

he joined the university's staff to develop computer-based educational materials. From the university he moved to Sweden, and then to Finland to establish a government sponsored PLATO® computer project. While there he met his Finnish wife, Anni, and a move to Finland followed. It was in Finland that he learned about TenCORE. Trueblood remembers: "I was working in a company that did CBT, and we had been using Pascal and C. I saw TenCORE and realized it took a lot less time to do things in TenCORE. So we started representing TenCORE in Finland." Thanks to the program he established in Finland, that country benefited from the largest number of TenCORE users per capita of any place in the world.

Although Trueblood planned to return to the U.S. sometime around 1990, CTC accelerated his timetable by inviting him to work

for the company in 1987. His task was to establish a training program for CTC, similar to the successful one in Finland.

Computers and people



In conclusion Trueblood remarked: "Early on in my CBT development work, I found I wanted to show others the techniques I discovered. My involvement with training began quite soon after I started doing CBT. In a way, the challenge of teaching people is similar to that of programming computers. While helping people to learn a task is quite different from getting a computer to 'learn,' both hold the same excitement for me."

PLATO is a registered trademark of Control Data Corporation.



CTC Training Director Jim Trueblood

TenCORE training: tools and knowledge for CBT

BY RICH WARREN

TENFOLD EDITOR



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earning the TenCORE Language Authoring System (LAS) excited me the same way as learning to read. Attending the five-day TenCORE training course at CTC headquarters in Champaign, Illinois, brought back memories of the more satisfying moments at school. No school can match the instructor/student ratio of one to six (or better) that CTC offers. This makes for rapid progress in an informal atmosphere, with the possibility of customized training. Two people share each PC in creating a demonstration CBT program using TenCORE. Working together, students progress farther and become more independent. They are more willing than solo learners to experiment and ask questions. TenCORE graduates return home with the tools and knowledge best suited to their work.

Undercover Trainee



I enrolled in CTC's week-long training class to learn about TenCORE as a writer, rather than as an end user. I shared the session with users from a major U.S. automaker and one of the world's largest accounting and consulting firms. Instructor John Eddins provided background theory and practical implementations of each concept, then set us to work. He guided us through any personal quagmires. The small-group informality promotes students to help one another as well as to swap ideas.

CTC provides individual workshop manuals to keep the training on target. Complete TenCORE documentation stands next to each PC. Thus students can proceed at their own pace, while delving as far into TenCORE as they desire.

Easier than BASIC



I found TenCORE simpler to learn than BASIC, and about on a par in difficulty with a sophisticated word processor or spreadsheet. When you make a mistake, TenCORE actually takes you back to the line and flags the error. This eliminates hours spent searching for a missing period or a misspelled word. Although the TenCORE language is moderately easy to learn, self-instruction might overlook much of TenCORE's immense power.

TenCORE LAS training starts from scratch. Students spend the first morning learning basic terms and computer screen coordinates. By lunch time you can locate any pixel on the screen, draw shapes and color them. Although CBT programmers ultimately accomplish this with TenCORE's fast, easy-to-use Graphics Editor, knowing these rudiments permit workshop graduates to fully understand and debug programs. Besides, just like the first time you used crayons in school, learning to draw with TenCORE is fun. It makes you feel comfortable with the program.

screen coordinates from the first day serve the amateur animators well in keeping the fish from jumping out of the EGA waters. Incidentally, several real aquariums grace CTC's premises. The animated fish look like they jumped from the tank onto the screen.

Following animation, other special effects unfold, such as mouse-made music. You learn to paint notes on the screen and direct the computer to voice them. TenCORE keeps CBT lively and interesting.

The final days of training compile all the previously learned skills into creating a demonstration CBT program with proper re-



Robbin Kopp and the CTC fish

The shapes, colors, and titles you've created are then linked to a menu. From the menu, simple training exercises develop. You act as both programmer and student, learning how to create options and judge responses. The second day of training concentrates on TenCORE grammar and making your sample CBT program more user-friendly and versatile.

Budding artists



By Wednesday would-be Van Goghs and Picassos populate the training room. Eddins reveals the secrets of TenCORE's built-in paintbrush facility. Soon mouse-guided splashes of color and patterns appear on the screen. No matter how many hours you spend in front of an EGA or VGA monitor, the ability to create color graphics remains fascinating.

A few hours later, TenCORE's animation abilities swim into view, in a most literal way. Students program an on-screen aquarium populated by swimming fish. The lessons in

sponse, scoring, and record keeping. From here Eddins led us into specific avenues for our applications. Each person could return home with the TenCORE skills to advance CBT in their environment.

Students who attend CTC training come with differing levels of CBT ability. A group of advanced users may agree to bypass the basic levels and set to work on advanced intricacies of the TenCORE LAS. Some bring already developed CBT lessons that need fine tuning.

Unlike many intensive professional training programs, CTC training retains a friendly, relaxed atmosphere. Company president Paul Tenczar might drop in to offer participants fresh-picked apples from his orchard. Training director Jim Trueblood stops by to offer additional help. Soft drinks, coffee and tea are all "on the house." A variety of nearby restaurants invite simply moving the conversation a block or two from the training room, for lunch or dinner. In my group, Eddins had to remind us about lunch, otherwise we would have contentedly programmed through the lunch hour, munching our apples.

Michelin rolls with TenCORE

BY JOHN PADIN

MICHELIN TYRE PLC, UK

Bells and whistles sell automobiles, but only tires make contact with the road. Michelin designs and produces tires with this in mind. It manufactures and sells more "own-brand" tires than anyone else in the world. In the United Kingdom alone, Michelin Tyre PLC operates four manufacturing plants.

The Michelin UK group established a policy requiring all production and engineering personnel to undergo a validation of necessary job-related knowledge and skills. The company carries out this validation, each year, and at the end of any training, measures employees' knowledge and skills against a set standard.

Validating over 3,000 skilled personnel

The growing staff of Michelin production and engineering personnel, now numbering over 3,000, overwhelmed the traditional paper-based knowledge validation system. In response, the company computerized the system.

Michelin chose TenCORE to create the validation shell. Individual departmental instructors use the shell to design a questioning system to validate an individual's job knowledge.

The computer-based validation (CBV) shell is a system to provide objective and automatic questioning. It consists of two main parts: the Question Disk and the Manager/Editor Disk.

The Question Disk contains the questions for the specific job, along with the operating system to run the questions and store the necessary data. Copying the operating system from a Master Question Disk and then inserting the questions using a "form filling" type editor creates the Question Disks.

Question structure

Three main types of question structure are available: single-answer multiple choice; multiple-answer multiple choice; open answer or fill-in-the-blank. Of course, there can be variations within these main structures. During a validation the responses to the questions are judged to four levels: fully correct; partially correct; incorrect; or validatee didn't know.

Once stored by the system, the information can be viewed, and in some aspects, edited by the manager. The system not only holds basic information such as name, code number, department, shift, validation title, date, time, duration, and score, but in addition records the user's response to every question. That enables "replaying" the entire validation, if necessary. The manager also allows results for skill validations to

be recorded in the system, making the shell into a total information store for validations.

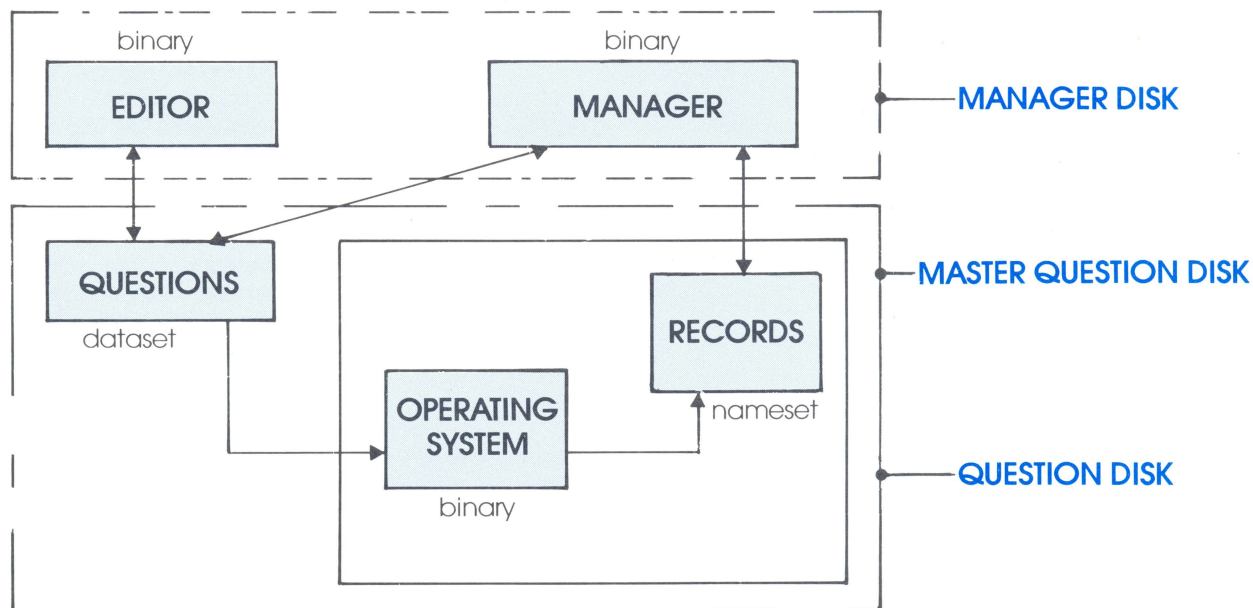
The other main function of the system is planning. A printout may be obtained from the existing records in the system showing who requires validation (knowledge or skill, or both), or what, and when. These records hold information on the previous five validations.

Financial and psychological advantages

CBV results in financial and psychological advantages. Financial gains include reducing person hours needed to carry out validations by 36 percent, paper need by 98 percent, time needed to modify a question by 80 percent, and the elimination of an instructor from the actual validation.

CBV achieves equal psychological benefits. For those being validated, these include acceptance of the computer as an impartial judge and the results as a sound basis for further training or retraining. Management acknowledges the results as a reliable judge of the person's job knowledge and the system as a means of objectively validating job knowledge.

This emphasis on quality through training validation assures that Michelin tires will experience a lasting relationship with the road. TenCORE made it easier for Michelin to make tires tough.



TENCORE DEALER

Steady Growth at Systems Interactive

BY GEORGE MACAULAY

MANAGING DIRECTOR,
SYSTEMS INTERACTIVE



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ystems Interactive (SI) was formed three years ago in the U.K. and enjoys over 200 long-term international clients including Philips, Marks & Spencer, HM Royal Navy, and the U.K. Department of Social Security. It has become an internationally successful TenCORE dealer—one of five now selling TenCORE products in the U.K.

SI expanded rapidly during 1989 in all areas of technology-based training. SI continues as a catalyst in the move towards interactive multi-media, one of the most clearly identifiable trends in the U.K. during the past year.

Pivotal role



Systems Interactive confirmed its pivotal role in October by appointing key members of Video Media, one of Europe's leading interactive video companies, to the S.I. staff. Video Media won the gold award at the British Interactive Video Association's (BIVA) Awards in 1988 with its "Antics and Semantics", a multi-media training project for British Rail.

Following this, SI is now working on a CD-I project in conjunction with Philips in the Netherlands and the U.K. Training Agency to investigate the applications of CD-I. The project focuses on CD-I's implications for training and design methodologies. A further aspect of the study examines the use of TenCORE CBT products with this rapidly emerging technology.

SI's courseware business grew rapidly following two major recruitment drives in national newspapers as part of an ongoing search for high-quality developers of interactive video and CBT. This courseware



Systems Interactive has become the first company to offer full-service training technology across CBT, IV and CD.

group successfully completed major contracts in all key sectors including finance, government and retailing.

Customer service



As an ongoing commitment to customer service, SI continues developing its regional activities. The Manchester office was opened to provide direct service to organizations in Scotland and the north of England, and expanded in 1989. After installing over 50 new TenCORE Language Authoring Systems (LAS) in its first year, SI north has already sold over 30 TenCORE Producers, and is involved in major projects including the use of two network Producers. Northern manager Roger Collins looks for further expansion this year as prospects are excellent for all products and services.

In October, 1989, SI appointed Mark

Compton-Hall Regional Manager in Windsor. Compton-Hall spearheads SI's military strategy, providing services and TenCORE products to military contractors. The recent appointment of Ferranti International as subdealers for TenCORE confirms the success of this strategy.

In November Susan Katz joined the company as Sales Manager. Katz joins SI from Ford Aerospace in the U.S., and brings with her many years of international experience in sales and marketing in technology-based training. Katz's appointment coincides with SI's push into vertical markets worldwide.

Launches TenCORE Producer



A highlight of the year was SI's launch of the TenCORE Producer at the Education and Training Exhibition in Birmingham. The event was well attended despite train strikes. CTC President Paul Tenczar demonstrated TenCORE Producer, which made an immediate impact and resulted in a high volume of orders.

The Fourth TenCORE Technology Update took place at the Business Design Centre in London on December 6. Over 140 delegates from Britain and the Continent attended this major annual event. Marks & Spencer, the Yorkshire Building Society, and the Royal Navy all presented application reports.

The number of delegates attending and the level of interest shown in the range of TenCORE products confirmed the pre-eminent position of TenCORE in the market. TenCORE sets the standard for organizations committed to the production of very high quality courseware.



TenCORE Producer propels you on the fast track

TenCORE Producer is a complete multi-media authoring system that helps novice or experienced authors quickly develop high quality courseware.

I'd

like to give credit to my Producer." You hear this standard Hollywood acknowledgement from the stars frequently at Academy Award ceremonies. A lot of CBT authors will be quoting the same line after working with TenCORE Producer. The award-quality finished lessons will be yours, but behind the scenes TenCORE Producer will help make it possible.

TenCORE Producer starts some users rolling like putting training wheels on a bicycle, while it rockets others ahead like igniting an after-burner on a jet engine. If you're a novice, or need a lesson in a hurry, TenCORE Producer makes you a pro in no time. If you're already a pro, TenCORE Producer works as a tool to increase your efficiency and your application's effectiveness.

A complete multi-media authoring system

TenCORE Producer is a complete multi-media authoring system that helps novice or experienced authors quickly develop high quality courseware. Utilizing pull-down menus and icons, you visually construct displays and combine them with questions or menus for an immediate work-



ing lesson. Integrated editors produce custom character fonts, edit bit-mapped images, manage student records, maintain course directories, and even organize the final delivery disks. A working lesson is guaranteed because TenCORE Producer automatically manages the lesson structure.

Combining immense power with flexibility and ease of use proved an inspiring challenge for CTC. President Paul Tenczar worked on the code along with the CTC staff to make TenCORE Producer a "miracle" product. It allows authors with minimal experience to input the bulk of a corporate training program quickly and with maximum results. However, Tenczar cautions users that no software, no matter how miraculous, can replace extended thinking about the nature and content of the intended courseware.

User inspired

CTC prides itself on remaining in touch with users and responding to their needs. Users suggested an easy-to-use interface for the powerful TenCORE Language Authoring System. Observing the growing trend toward graphic interfaces, CTC commenced work on TenCORE Producer. Rather than leading users to a dead end, the weakness of many graphic interface CBT shells, CTC programmers spent extra time to incorporate TenCORE's power and preserve upward compatibility. While TenCORE Producer matches or exceeds most other products in ease of use, its power begins where others leave off.

In designing TenCORE Producer, Tenczar assumed that many users would outgrow it, when they became comfortable authoring CBT lessons. Thus, lessons constructed using TenCORE Producer can be edited and modified using the full TenCORE Language Authoring System.

Experienced users benefit

This same design concept allows experienced designers and developers to use TenCORE Producer as a rapid prototyping tool. They can achieve up to 90 percent of their goal using TenCORE Producer and then easily move the lesson to the full TenCORE Language Authoring System for fine tuning and enhancement. This fulfills corporate demands for propriety finished designs. Whereas TenCORE Producer helps create fairly standardized courseware, the full authoring system unlocks nearly unlimited variations.

CTC counts many large Fortune 500 companies among the biggest users of TenCORE. These companies employ a mix of

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TENCORE HOTLINE

Help is just a phone call away

"TenCORE Hotline ... this is Nick." Those words spoken by Nick Madelung on the other end of the line calm many a troubled TenCORE user. Nick's friendly, reassuring voice guides you through the complexities of the TenCORE family of programs. Usually, all it takes is a brief chat with Nick to have your application up and running.

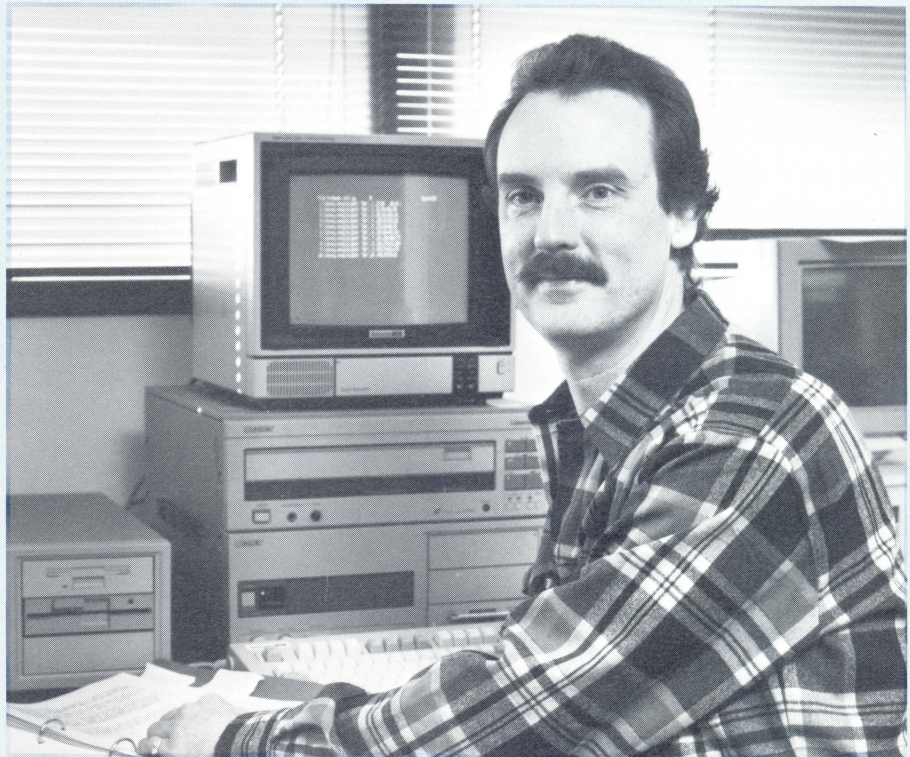
Meet Nick



Nick Madelung has been fielding your TenCORE Hotline calls for about a year. His familiarity with the intricacies of TenCORE speeds most users on their way to successful applications. He views TenCORE as "a tool easing the path between programmer experience and microcomputer capability."

Madelung, an applications programmer, has well over a decade of experience in the field of computer based training/education using systems such as PLATO and TenCORE. He joined CTC after 4½ years of working with Denmark's EDP Center for Research and Training. While living in Denmark he became acquainted with TenCORE. Madelung finds working at CTC enjoyable and appreciates the flexible small-company atmosphere.

You may speak with Steve Simpson, Mike Betts, Don Appleman, or others on the CTC staff, as well as Madelung when calling the Hotline. Madelung divides his time at CTC between his specialty, applications programming, and the Hotline. He spoke of this as being an advantage when answering the Hotline: "As an applications programmer, I am more in tune with customers' needs than, for example, a systems programmer. Since most questions are answered off the top of our heads, it is very important that experienced applications programmers answer the Hotline. Anyone can suggest that the caller read the reference manual. It takes an understanding of the caller's experience and application programming with TenCORE to effectively answer the type of questions we receive on the Hotline."



Nick Madelung, one of the knowledgeable staff at the other end of the TenCORE Hotline.

Reach out and touch us



CTC welcomes telephone calls, facsimiles, and mailed questions for the Hotline. The CTC Hotline service is included as a part of the CTC maintenance agreement. Phone calls are answered from 8am to 5pm Chicago time. The average Hotline conversation lasts 5 to 15 minutes, although some sessions have lasted as long as two hours. Calls come from as nearby as the University of Illinois in Urbana to as far away as Manila and Helsinki.

One of the most time-consuming types of Hotline questions Madelung fields concerns programming technique, such as: "How do I program such and such in TenCORE?"

These include questions on how to use special character sets, how to program using the -arrow- command and related judging commands, and how to program the mouse and touch panel.

Madelung gladly answers all inquiries, but suggests that users can save considerable time by double-checking their reference manuals and on-line information. Another resource to consult are experienced co-workers within their own organizations. Madelung also recommends exploration and trial-and-error as a standard programmer's learning technique. Aided by TenCORE's ample documentation, this technique opens up new vistas to users, and

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(217) 356-8088

HOTLINE QUESTIONS

In each issue of TenFold we'd like to answer some of the most commonly asked questions from the TenCORE Hotline. You're welcome to send questions in writing to Hotline for inclusion here.

Image formats and TenCORE

Can I import the bit-mapped images I have into TenCORE, and can I use a scanner to get images into TenCORE?

If your images are in PC Paintbrush+ format, or Dr. Halo format, you can import your images directly into TenCORE. If you are using any other format, you must find a way to convert your images to either of the above formats before you can import them into TenCORE. You can import scanned images into TenCORE if they are in either of the above formats. The new editor in TenCORE 4.0/4.1 allows you to edit images imported into or created in TenCORE.

Display drivers

How come I can't get EGA screens on my EGA machine?

When you receive TenCORE, the default display driver is set to CGA graphics. If you have a different graphics adapter on your microcomputer than CGA, you must either change the default display driver, or explicitly state which display driver is to be used when you start TenCORE. For example: `d:author /d=ega`. To change the default display driver, copy the display driver you want to use into the `display.dis` file. For example: `copy ega.dis display.dis`.

Backups

If I delete a TenCORE block, is there any way to recover it?

Right now there is no direct way in TenCORE to recover deleted blocks or corrupted blocks (e.g. resulting from disk errors). As with any programming language, you should make regular backups. We suggest backups should be made once or twice a day for current work, and once a week for all project files.

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reduces misconceptions about the software's functions.

On rare occasions, users may uncover an error in TenCORE or related programs. The Hotline welcomes error reports and acts upon them immediately. The CTC systems staff investigates all such reports and makes necessary corrections. Meanwhile, the Hotline staff provides the caller with a "work-around" for the problem. However, some error reports stem from users misunderstanding parts of TenCORE. With a short explanation and a few suggestions Madelung clears up misconceptions.

Hotline response to error reports typically involves a "walk-through" of the caller's program to learn its intent and determine why it's failing. Thus, you should be at your PC when calling. Typical problems involve incorrectly defining global and local variables, or side-effects from other parts of the program. When errors or "bugs" appear, isolate the offending code entirely from the base program. Once isolated, test the code. If it performs exactly as anticipated or planned, then something else in the program was written incorrectly or has an unexpected side-effect.

Keep those cards and letters coming

Madelung encourages users to write to or fax the TenCORE Hotline with suggestions, ideas, and requests. He believes putting thoughts in writing helps develop ideas. Good ideas often pass unnoted when speaking rather than writing.

A new aspect of the CTC Hotline debuts this year. CTC is currently completing the arrangements for an on-line Bulletin Board System. With this BBS users will not only be able to have their questions answered via electronic mail but will be able to help one another and share TenCORE programming ideas. Watch for details in the next issue of TenFold.

TenCORE Producer propels you on the fast track

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advanced programmers and more general courseware developers. TenCORE Producer suits this team approach often found in large companies. Its open-ended design permits coders to program complex animations while the design team arranges the basic look of the courseware. When finished, all participants easily merge their efforts. Jim Glish, CTC's marketing director, compares TenCORE Producer to desktop publishing, in the sense that users integrate pieces from various sources into a single screen presentation. TenCORE Producer's multi-media design unites a wide range of courseware and technology from CBT lessons to interactive video, print to speech. Corporate management benefits from each contributor working at maximum efficiency, as well as from giving newcomers the opportunity to make an immediate contribution.

"On the Fast Track" headlines CTC's promotional literature for TenCORE Producer. This literature lists the myriad features of the program and its technical details. Analogous to the pictured athlete in the literature, when it comes to courseware design and CBT lessons, TenCORE Producer turns joggers into sprinters, and sprinters into greased lightning.



"On the Fast Track"

TenCORE[®] Producer

You'll be off and running in record time with the TenCORE Producer, an easy to use authoring system that develops winning courseware every time.

Start quickly with the Producer's easily learned menu-driven system that has the flexibility to keep you moving. It's ideal for developing high quality courseware for the IBM family of PCs as well as the major interactive video systems.

Time is money! You'll save both with the Producer's visually oriented user interface. Pull down menus and graphic icons help you quickly generate text and graphic displays, create different types of responses and branching, and integrate interactive video sequences.

The Producer guarantees working lessons by automatically managing the lesson structure. Its upward compatibility opens the way to the advanced features of the TenCORE Language Authoring System. Whether a first-time author or an experienced developer, the TenCORE Producer speeds you from start to finish.

TenCORE Producer—The fast track for courseware development.

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